IN THE CLAIMS

Please replace the claims as filed with the claims set forth below.

1. (previously presented) An optical sensor, comprising a detection module, which detection module comprises an organic light emitting diode (1) and an organic detection photodiode (2, 2a) for measuring emitted light which during the use of the sensor reaches the photodiode via a sample holder.

2. (previously presented) The optical sensor according to claim 1, wherein the photodiode is a photovoltaic cell.

3. (previously presented) The optical sensor according to claim 1, wherein the sensor comprises an organic reference photodiode (2, 2b) for measuring a reference signal coming from said light emitting diode of the detection module or from a second light emitting diode.

4. (previously presented) The optical sensor according to claim 3, wherein the reference diode forms part of a reference module, which reference module optionally further comprises a blank holder.

5. (previously presented) The optical sensor according to claim 1, wherein the organic light emitting diode, the organic detection photodiode and the sample holder are situated on or in a carrier material in one piece.

6. (previously presented) The optical sensor according to claim 1, wherein the sensor is of the transmissive or of the reflective type.

7. (previously presented) The optical sensor according to claim 1, wherein the light emitting diode and the photodiode in the detection module and optionally in the reference module are connected with each other through a plastic waveguide (5).

8. (previously presented) The optical sensor according to claim 7, wherein at least a part of the waveguide (5) has a trapezoidal shape with a top side (a), a base side (b) and two oblique sides (c), a sample holder (3) is situated at the top side (a), and the light emitting diode and the photodiode are situated on opposite sides of the sample holder (3) on the base side (b).

9. (previously presented) The optical sensor according to claim 8, wherein the top side (a) and the base side (b) are at least substantially parallel to each other.

10. (previously presented) The optical sensor according to claim 8, wherein at least one of the oblique sides of the plastic waveguide is provided with a reflecting layer.

11. (previously presented) The optical sensor according to claim 8, wherein the angle between the base side and at least one oblique side is 10-70°.

12. (previously presented) The optical sensor according to claim 4, wherein the detection module, and the reference module, is situated on or is embedded in a plastic carrier material which is provided with an electronic circuit.

13. (previously presented) The optical sensor according to claim 1, wherein the light emitting diode is a polymeric light emitting diode, having in the photoactive layer as electroluminescent compound a polymer selected from a group consisting of polyarylene compounds, poly(paraphenylene vinylene) compounds, polyfluorene compounds, polyacetylene compounds, polythiophene compounds, polypyrroles, polyanilines, including derivatives of said polymers, copolymers of said polymers and said polymers provided with a dye.

14. (previously presented) The optical sensor according to claim 3, wherein one of the detection photodiode and the reference photodiode is a polymeric photodiode, preferably a photodiode having in the photoactive layer a polymer selected from the group consisting of

polyarylene compounds, poly(paraphenylene vinylene) compounds, polyfluorene compounds, polyacetylene compounds, polythiophene compounds, polypyrroles, polyanilines, including derivatives of said polymers, copolymers of said polymers and said polymers provided with a dye.

15. (previously presented) The optical sensor according to claim 8, wherein the waveguide comprises at least substantially one or more plastics selected from a group consisting of polycarbonates (e.g. polymethylmethacrylate perspex), cyclic olefinic polymers (e.g. Zeonex®, Topas), polymethyl pentenes (e.g. TPX™), polymethyl-methacrylates (PMMA), polystyrenes (PS), polyamides, polyvinyl chlorides, polyethyl-terephthalates, polypropylenes, styrene butadiene styrene copolymers, cellulose polymers, polyethylenes and polynorbornenes.

16. (previously presented) The optical sensor according to claim 1, wherein the sample holder contains an active layer of which an optical property, preferably the refractive index, the UV-VIS absorption, the fluorescence or the IR absorption, changes when the active layer is in contact with a component to be measured.

17. (previously presented) The optical sensor according to claim 16, wherein the active layer is selected from the group consisting of ion exchangers, ion-selective permeable membranes and gas-selective permeable membranes.

18. (previously presented) The optical sensor according to claim 16, wherein the optical property of the active layer changes as a result of the presence of a component selected from the group consisting of alcohols, in particular ethanol, carbon dioxide, ammonia, oxygen and water.

19. (previously presented) The optical sensor according to claim 1, comprised substantially of plastic.

20. (previously presented) An array of optical sensors each comprising a detection

module, which detection module comprises an organic light emitting diode (1) and an organic detection photodiode (2, 2a) for measuring emitted light which during the use of the sensor reaches the photodiode via a sample holder according to claim 1.

21. (previously presented) A method for manufacturing an optical sensor comprising:

providing a detection module comprised of an organic light emitting diode (1) and

associating the detection module with an organic detection photodiode (2).

22. (previously presented) The method for manufacturing an optical sensor according to claim 21, further comprising:

associating a reference module composed from an organic light emitting diode (1), with the optical sensor; and

associating an organic reference photodiode (2) with the sensor.

23. (previously presented) The method according to claim 21, wherein one of the light emitting diode (1) and the photodiode (2, 2a, 2b) is manufactured by means of injection molding, printing, dip coating, vacuum deposition or spin coating.

24. (previously presented) The method according to claim 21, wherein the diodes are manufactured on at least one of a surface of the waveguide, a surface of a carrier material for the detection module, an electronic circuit and the reference module.

25. (previously presented) The method according to claim 21, wherein the waveguide is manufactured by means of injection molding or extrusion.

26. (previously presented) The method according to claim 21, wherein the detection module is built up integrally.

27. (previously presented) The method according to claim 21, wherein the light

emitting diode and the detection photodiode are provided in association with one carrier material and the carrier material is then folded.

28. (previously presented) The method according to claim 21, wherein the sensor is provided with one of a plastic and metal covering layer, and the sample holder remains at least substantially free of the covering layer.

29. (canceled)

30. (canceled)

31. (canceled)